

What is claimed is:

1. A powdered composition which reacts in water to form one or more peroxy-carboxylic acids (other than peracetic acid) in an anti-microbial effective concentration, providing surface disinfection/sterilization of human and animal skin, tissue and body cavities; and medical devices/instruments, comprising:  
a perborate,  
one or more acyl and/or aroyl donors which form a peracid of one carbon, and/or greater than two carbons; and  
a buffering system which upon mixing with water allows the pH to rise to about 9 for a rapid formation of one or more peroxy-carboxylic acids and then drop to from about 7.0 to about 8.0 for sustained stability and microbial kill.
2. The composition of claim 1 which is from about 20% by weight to about 50% by weight of a Group I metal perborate.
3. The composition of claim 2 which is from about 40% by weight to about 45% by weight of a Group I metal perborate.
4. The composition of claim 2 wherein the Group I metal is sodium.
5. The composition of claim 3 wherein the Group I metal is sodium
6. The composition of claim 1 wherein the amount of one or more acyl and/or aroyl donors is from 1% by weight to 50% by weight of the composition.
7. The composition of claim 6 wherein the amount of one or more acyl and/or aroyl donors is from 40% by weight to 45% by weight of the composition.

8. The composition of claim 1 wherein the buffering system is a combination of monobasic, dibasic and/or tribasic sodium phosphate, either as hydrates and/or anhydrous salts.

9. The composition of claim 8 wherein the buffering system consists of Sodium phosphate monobasic (monohydrate) from 5% by weight to 15% by weight of the composition.

10. The combination of claim 1 which includes a surfactant which facilitates microbial kill.

11. The composition of claim 2 wherein the surfactant is an alkylaryl sulfonate.

12. The composition of claim 11 wherein the amount of surfactant is from .005% by weight to 1.0% by weight of the composition.

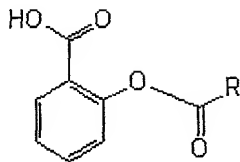
13. The composition of claim 12 wherein the amount of surfactant is from 0.01% to 0.5% by weight of the composition.

14. The composition of claim 10 which includes minors selected from the group consisting of corrosion inhibitors, sequestrants, stabilizers, odorants and dyes.

15. The composition of claim 1 wherein the amount of minors is from 0.001% by weight to 5.0% by weight of the composition.

16. The powdered composition which reacts in water to form one or more peroxycarboxylic acids in an anti-microbial effective concentration providing surface disinfection/sterilization of human and animal skin, tissue and body cavities; and medical devices/instruments, comprising:  
from about 20% by weight to about 50% by weight of sodium perborate;

from about 1% by weight to 50% by weight of one or more acyl donors of the formula:

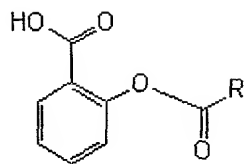


wherein R is C<sub>2</sub>-C<sub>10</sub> alkyl, straight chained, branched, or cyclic, and from about 1% to 30% by weight of a buffering system which consists of a combination of monobasic, dibasic and/or tribasic sodium phosphate, either as hydrates and/or anhydrous salts; and from about 0.005% to 1.0% by weight of an alkylaryl sulfonate surfactant.

17. The composition of claim 16 which has a D-value of six minutes or less at or below 60°C for disinfection/sterilization of medical devices/instruments.

18. The composition of claim 17 wherein the alkylaryl sulfonate surfactant is the sodium salt of dodecylbenzenesulfonic acid.

19. The method of forming peroxydicarboxylic acids for use as a germicide comprising:  
reacting novel acyl donors of the formula:



wherein R is C<sub>2</sub>-C<sub>10</sub>, alkyl, straight chained, branched, or cyclic with a Group I perborate salt to generate in situ peroxycarboxylic acids.

20. The method of claim 19 wherein the Group I perborate salt is sodium perborate.